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PTO/SB/05 (08-00)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. P1316
First Inventor BIN YU
Title MOS TRANSISTOR...HALO IMPLANT
Express Mail Label No. JEL846380593US

04/27/01

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

- ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
- ☐ Applicant claims small entity status.
See 37 CFR 1.27.
- ☒ Specification [Total Pages 8]
(preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
- ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 5]
- Oath or Declaration [Total Pages 2]
 - ☒ Newly executed (original or copy)
 - ☐ Copy from a prior application (37 CFR 1.63 (d))
(for continuation/divisional with Box 17 completed)
 - ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
- ☐ Application Data Sheet. See 37 CFR 1.76

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

- ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
- Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - ☐ Computer Readable Form (CRF)
 - Specification Sequence Listing on:
 - ☐ CD-ROM or CD-R (2 copies); or
 - ☐ paper
 - ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

- ☒ Assignment Papers (cover sheet & document(s))
- ☐ 37 CFR 3.73(b) Statement (when there is an assignee) ☒ Power of Attorney
- ☐ English Translation Document (if applicable)
- ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
- ☐ Preliminary Amendment
- ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
- ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
- ☒ Other: Ck No. 3777 & 3776

17. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

of prior application No.: _____

Prior application information: Examiner _____

Group / Art Unit: _____

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

18. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label

(Insert Customer No. or Attach bar code label here)

or ☐ Correspondence address below

Name LaRiviere, Grubman & Payne, LLP
Address P.O. Box 3140
City Monterey, State California Zip Code 93942
Country United States Telephone 831-649-8800 Fax 831-649-8835

Name (Print/Type) Victor Flores Registration No. (Attorney/Agent) 29,638
Signature [Signature] Date April 27, 2001

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

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**FEE TRANSMITTAL
for FY 2001**

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT (\$ 750.00)**Complete If Known**

Application Number	Filed Herewith
Filing Date	April 27, 2001
First Named Inventor	BIN YU
Examiner Name	Unassigned
Group Art Unit	Unassigned
Attorney Docket No.	P1316

METHOD OF PAYMENT

- 1.
- ☐
- The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number	
Deposit Account Name	

☐ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17☐ Applicant claims small entity status. See 37 CFR 1.27

- 2.
- ☒
- Payment Enclosed:**

☒ Check ☐ Credit card ☐ Money Order ☐ Other**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
101 710	201 355	Utility filing fee	710.00
106 320	206 160	Design filing fee	
107 490	207 245	Plant filing fee	
108 710	208 355	Reissue filing fee	
114 150	214 75	Provisional filing fee	

SUBTOTAL (1) (\$ 710.00)**2. EXTRA CLAIM FEES**

Total Claims	Extra Claims	Fee from below	Fee Paid
11	-20** = 0	0	0
3	-3** = 0	0	0
Multiple Dependent			

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
103 18	203 9	Claims in excess of 20
102 80	202 40	Independent claims in excess of 3
104 270	204 135	Multiple dependent claim, if not paid
109 80	209 40	** Reissue independent claims over original patent
110 18	210 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ 0.00)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
105 130	205 65	Surcharge - late filing fee or oath	
127 50	227 25	Surcharge - late provisional filing fee or cover sheet	
139 130	139 130	Non-English specification	
147 2,520	147 2,520	For filing a request for <i>ex parte</i> reexamination	
112 920*	112 920*	Requesting publication of SIR prior to Examiner action	
113 1,840*	113 1,840*	Requesting publication of SIR after Examiner action	
115 110	215 55	Extension for reply within first month	
116 390	216 195	Extension for reply within second month	
117 890	217 445	Extension for reply within third month	
118 1,390	218 695	Extension for reply within fourth month	
128 1,890	228 945	Extension for reply within fifth month	
119 310	219 155	Notice of Appeal	
120 310	220 155	Filing a brief in support of an appeal	
121 270	221 135	Request for oral hearing	
138 1,510	138 1,510	Petition to institute a public use proceeding	
140 110	240 55	Petition to revive - unavoidable	
141 1,240	241 620	Petition to revive - unintentional	
142 1,240	242 620	Utility issue fee (or reissue)	
143 440	243 220	Design issue fee	
144 600	244 300	Plant issue fee	
122 130	122 130	Petitions to the Commissioner	
123 50	123 50	Petitions related to provisional applications	
126 240	126 240	Submission of Information Disclosure Stmt	
581 40	581 40	Recording each patent assignment per property (times number of properties)	40.00
146 710	246 355	Filing a submission after final rejection (37 CFR § 1.129(a))	
149 710	249 355	For each additional invention to be examined (37 CFR § 1.129(b))	
179 710	279 355	Request for Continued Examination (RCE)	
169 900	169 900	Request for expedited examination of a design application	

Other fee (specify) _____

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 40.00)**SUBMITTED BY**

Name (Print/Type)	Victor Flores	Registration No. (Attorney/Agent)	29,638	Telephone	831-649-8800
Signature	<i>Victor Flores</i>	Date	April 27, 2001		

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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**NONPUBLICATION REQUEST
UNDER
35 U.S.C. 122(b)(2)(B)(i)**

First Named Inventor BIN YU

Title MOS TRANSISTOR...HALO IMPLANT

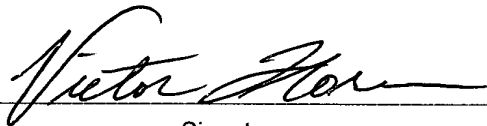
Atty Docket Number P1316

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

April 27, 2001

Date



Signature

Reg. No. 29,638

Victor Flores

Typed or printed name

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

Burden Hour Statement: This collection of information is required by 37 CFR 1.213(a). The information is used by the public to request that an application not be published under 35 U.S.C. 122(b) (and the PTO to process that request). Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This form is estimated to take 6 minutes to complete. This time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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Date of Deposit: April 27, 2001

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Typed or Printed Name of Person Mailing Paper or Fee: Patricia Aguillon

Signature: Patricia Aguillon

PATENT
Docket No. P1316

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: BIN YU

SERIAL NO.: FILED HEREWITH

FILED: APRIL 27, 2001

FOR: MOS TRANSISTOR WITH HIGHLY LOCALIZED
SUPER HALO IMPLANT

BOX PATENT APPLICATION
ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

TRANSMITTAL

Dear Sir:

In connection with the above-referenced patent application, transmitted herewith are the following:

1. Transmittal Letter (2 pages);
2. Utility Patent Application Transmittal Form (1 page);
3. Specification (4 pages), Claims (3 pages), and Abstract (1 page);
4. Informal Drawings (5 sheets);
5. Fee Transmittal Form (1 page);
6. Declaration and Power of Attorney (2 pages);

G0041


7. Recordation Form Cover Sheet Form PTO-1595 (1 page);
8. Assignment Agreement (2 pages);
9. Nonpublication Request Under 35 U.S.C. 122(b)(2)(B)(i) (1 page);
10. Check No. 3777 in the amount of \$ 710.00 to cover the fees as calculated below;
11. Check No. 3776 in the amount of \$ 40.00 to cover the Recordation of Assignment Fee;
12. Post card in acknowledgment of receipt of all transmitted material, (LGP); and
13. Post card in acknowledgment of receipt of all transmitted material, (AMD).

CLAIMS AS FILED BY A LARGE ENTITY

(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) BASIC FEE \$ 710.00
TOTAL CLAIMS	11	0	x\$ 18.00	.00
INDEPENDENT CLAIMS	3	0	x\$ 40.00	.00
ANY MULTIPLE CLAIMS	0	0	0	.00
SURCHARGE				.00
TOTAL FILING FEE				\$ 710.00

Please date-stamp the enclosed post cards and return same to the undersigned in acknowledgment of receipt of all transmitted materials.

Respectfully submitted,


Victor Flores
Reg. No. 29,638

VF/dbr
April 27, 2001
LARIVIERE, GRUBMAN & PAYNE, LLP
Post Office Box 3140
Monterey, CA 93942
(831)649-8800

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"Express Mail" mailing label number: EL846380593US

Date of Deposit: April 27, 2001

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Typed or Printed Name of Person Mailing Paper or Fee: Patricia Aguillon

Signature: Pat Aguillon

PATENT
Docket No. P1316

PATENT APPLICATION

MOS TRANSISTOR WITH HIGHLY LOCALIZED SUPER HALO IMPLANT

INVENTOR: BIN YU

TECHNICAL FIELD

[0001] The present invention relates generally to field effect transistor fabrication, and more particularly to engineering of the channel under the transistor to counter short field effects in deep-submicron complementary (CMOS) field effect transistors on the same chip.

BACKGROUND OF THE INVENTION

Sub A17 [0002] When MOSFET gate length is scaled below 100 nanometers (nm), short channel effects become significant factors. Strong or higher implant dose super halo implants are widely used in deep submicron CMOS technology to engineer the FET channel to overcome short channel effects. Super halo implants however, tend to degrade the source/drain junction capacitance, resulting in slower switching speed of the transistor. What is needed is a method to engineer the channel doping profile without affecting the source/drain junction region to overcome the short channel effects in deep submicron CMOS chips having gate lengths of approximately 50 nm or less